AUG 2 8 2003 HADS AASSADStitute for form 1449/PTO

PTO/SB/08A (04-03) Approved for use through 04/30/2003, OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

**Application Number** 10/625,810 Filing Date July 22, 2003 First Named Inventor Lier, Erik, et. al. 2621 Art Unit Examiner Name Not yet known

(use as many sheets as necessary) Page of | 3

040092-020010US Attorney Docket Number

| U.S. PATENT DOCUMENTS |              |   |                                |  |  |  |  |  |
|-----------------------|--------------|---|--------------------------------|--|--|--|--|--|
| Examiner              | Cite<br>No.1 | Document Number  Number Kind Code <sup>2</sup> (if known) | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | CLAS Pages, Columns, Lines, Where Relevant Passages or Refevant Figures Appear |  |  |  |
| FA                    | AA           | US-2,786,133  | 03-19-1957                     | Dyke   |  |  |  |  |
| FA                    | AB           | US-2,951,152  | 08-30-1960                     | Sichak et al.                                      |  |  |  |  |
| EA                    | AC           | US-4,885,589  | 12-05-1989                     | Edward et al.                                      |  |  |  |  |
| EA                    | AD           | US-4,939,527  | 07-03-1990                     | Lamberty et al.                                    |  |  |  |  |
| EA                    | AE           | US-5,017,927  | . 05-21-1991                   | Agrawai et al.                                     |  |  |  |  |
| F.A                   | AF           | US-5,291,475  | 03-01-1994                     | Bruckert   |  |  |  |  |
| EL                    | AG           | US-5,345,603  | 09-06-1994                     | Laffont  |  |  |  |  |
| EA                    | AH           | US-5,394,561  | 02-28-1995                     | Freeburg   |  |  |  |  |
| FA                    | AI           | US-5,459,474  | 10-17-1995                     | Mattioli et al.                                    |  |  |  |  |
| EA                    | AJ           | US-5,572,219  | 11-05-1996                     | Silverstein et al.                                 |  |  |  |  |
| EA                    | AK           | US-5,663,736  | 09-02-1997                     | Webb et al.  |  |  |  |  |
| EA                    | AL           | US-5,668,128  | 09-09-1997                     | Murray et al.                                      |  |  |  |  |
| FA                    | AM           | US-5,675,343  | 10-07-1997                     | Champeau   |  |  |  |  |
| FA                    | AN           | US-5,708,969  | 01-13-1998                     | Kotzin et al.                                      |  |  |  |  |
| FA                    | AO           | US-5,734,983  | 03-31-1998                     | Faruque  |  |  |  |  |
| EA                    | AP           | US-5,740,536  | 04-14-1998                     | Benveniste   |  |  |  |  |
| EA                    | AQ           | US-5,768,266  | 06-16-1998                     | Thompson et al.                                    |  |  |  |  |
| EA                    | AR           | US-5,790,070  | 08-04-1998                     | Natarajan et al.                                   |  |  |  |  |
| EA                    | AS           | US-5,790,071  | 08-04-1998                     | Silverstein et al.                                 |  |  |  |  |
| FA                    | AT           | US-5,870,063  | 02-09-1999                     | Cherrette et al.                                   |  |  |  |  |
| FA                    | AU           | US-5,927,654  | 07-27-1999                     | Foley et al.                                       |  |  |  |  |
| FA                    | AV           | US-6,002,360  | 12-14-1999                     | Wolcott et al.                                     |  |  |  |  |
| EA                    | AW           | US-6,043,776  | 03-28-2000                     | Chiba et el.                                       |  |  |  |  |
| EA                    | AX           | US-6,084,545  | 07-04-2000                     | Lier et al.  | e  |  |  |  |
| FA                    | AY           | US-6,112,094  | 08-29-2000                     | Dent   |  |  |  |  |
| EA                    | AZ           | US-6,157,621  | 12-05-2000                     | Brown et al.                                       |  |  |  |  |
| EA                    | BA           | US-6,163,296  | 12-19-2000                     | Lier et al.  |  |  |  |  |
| FA                    | 88           | US-6,172,655  | 01-09-2001                     | Volman   |  |  |  |  |
| EA                    | BC           | US-6,232,920  | . 05-15-2001                   | Brookner et al.                                    |  |  |  |  |
| EA                    | BO           | US-6,239,762  | 05-29-2001                     | Lier   |  |  |  |  |
| FA                    | BE           | US-6,246,364  | 06-12-2001                     | Rao et al.   | <del></del>  |  |  |  |
| EA                    | BF           | US-6,362,780  | 03-26-2002                     | Butz et al.  |  |  |  |  |
| EA                    | BG           | US-6,366,238  | 04-02-2002                     | DeMore et al.                                      |  |  |  |  |
| 20                    | ВН           | US-6,377,561  | 04-23-2002                     | Black et al.                                       | <u>-</u>   |  |  |  |

Examiner Date Considered Signature

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). <sup>2</sup> Kind Codes of U.S. Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard \$T.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the senal number of the patent document. 6 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. Applicant is to place a check mark here if English language Translation is attached.

O1PE 03

PTO/SB/08A (04-03)
Approved for use through 04/30/2003. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE us not required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Page 2 of 3

|                        | Complete if Known   |
|------------------------|---------------------|
| Application Number     | 10/625,810          |
| Filing Oate            | July 22, 2003       |
| First Named Inventor   | Lier, Erik, et. al. |
| Art Unit               | 2821                |
| Examiner Name          | Not yet known ALEMU |
| Attorney Docket Number | 040092-020010US     |

| U.S. PATENT DOCUMENTS |              |   |                             |  |  |  |
|-----------------------|--------------|---|-----------------------------|--|--|--|
|                       |              | Document Number                         |                             | Name of Palentee or<br>Applicant of Clied Document | CLAS Columns Lines, Where  |  |
| Examiner              | Cite<br>No.' | Number Kind Code <sup>2</sup> (# known) | Publication Date MM-DD-YYYY |  | Pages, Columns Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |  |
| EA                    | BI           | US-6,407,722                            | 06-18-2002                  | Bogner et al.                                      | <b>+</b>   |  |
| EA                    | BJ           | US-6,411,256                            | 06-25-2002                  | Lier et al.  |  |  |
| EA                    | BK           | US-6,507,315                            | 01-14-2003                  | Purdy et al.                                       |  |  |
| EA                    | BL           | US-6,522,643                            | 02-18-2003                  | Jacomb-Hood et al.                                 |  |  |
| EA                    | BM           | US-2001/0034206                         | 10-25-2001                  | Thompson et al.                                    |  |  |
| EA                    | BN           | US-2002/0171583                         | 11-21-2002                  | Purety et al.                                      |  |  |
| EA                    | во           | US-2002/0171585                         | 11-21-2002                  | Eiges  |  |  |

| FOREIGN PATENT DOCUMENTS |             |                           |  |                                |                              | CLAS SKB   |    |
|--------------------------|-------------|---------------------------|--|--------------------------------|------------------------------|--|----|
| Examiner<br>Initials*    | Cite<br>No. | Foreign Palent Document   |  |                                | Name of Patentee or          | Pages, Columns, Lines,                             |    |
|                          |             | Country Code <sup>3</sup> | Number <sup>4</sup> Kind Cade <sup>6</sup> (# known) | Publication Date<br>MM-DD-YYYY | Applicant of Cited  Document | Where Relevant Passages or Relevant Figures Appear | Τ* |
| TA                       | BP          | EP                        | 0276817  | 03-68                          |                              |  |    |
| FA                       | BQ          | EP                        | 0798209  | 01-97                          |                              |  |    |
| EA                       | BR          | GB                        | 2251360  | 01-92                          |                              |  |    |
| FA                       | BS          | JP                        | 0248124  | 03-90                          |                              |  |    |
| FA                       | BT          | WO                        | 00/07307   | 02-2000                        |                              |  |    |

|                       |       |        | <del></del>        | ويبار ويستون والمستون والمراود ويتاه ويتمان والمناف المستون والمراود والمراود والمستون والمستون والمستون |
|-----------------------|-------|--------|--------------------|--|
| Examiner<br>Signature | Exhan | Alence | Date<br>Considered | 12-10-04   |

EXAMINER: Initial if retarence considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered, include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Kind Codes of U.S. Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. Enter

Applicant's unique citation designation number (optional). Kind Codes of U.S. Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Petent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08B (04-03) Approved for use through 04/30/2003, OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Complete if Known **Application Number** 10/625,810 Filing Date July 22, 2003 First Named Inventor Lier, Erik, et. al. Art Unit 2821 **Examiner Name** Not yet known Attorney Docket Number 040092-020010US

(use as many sheets as necessary)

Page

| NON PATENT LITERATURE DOCUMENTS |              |   |                |  |
|---------------------------------|--------------|---|----------------|--|
| Examiner<br>Initials *          | Cite<br>No.1 | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>2</sup> |  |
| EA                              | BU           | KILGUS, Dr. C.C., Spacecraft and Ground Station Applications of the Resonant Quadrifilar Helix, IEEE International Conference, 1974, pp. 75-77.   |                |  |
| EA                              | BV           | KILGUS, Dr. C.C., Resonant Quadrifilar Helix Design, The Microwave Journal, Dec. 1970, pp. 49-54.   |                |  |
| EA                              | BW           | HALL, P.S. et al., Review of Radio Frequency Beamforming Techniques for Scanned and Multiple Beam Antennas, IEEE Proceedings Part H., Oct. 1, 1990, pp. 293-303, Vol. 137, No. 5.   |                |  |

Examiner Date Signature Considered

EXAMINER: Initial preference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

EXAMINER: Initiarly reference considered, whether or not citation is in conformance with MPEP 609. Draw tine through citation in not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The Information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.